

supported in the specification at page 6, lines 31-34 and original Claim 9; and by reciting that the at least one hydrophilic polymer and the porous absorbent material are different from each other, which is supported by implication throughout the specification since, the invention makes no sense if each of these components can be the same component.

Claims 9, 16 and 17 have been cancelled as now redundant.

Claim 5 has been amended into independent form.

New Claims 24-26 have been added. Claim 24 is supported by Claim 10, and page 8, lines 7-8 of the specification. Claim 25 is supported in the specification at page 4, lines 35-36. Claim 26 is drawn to a method for reducing frost and is supported throughout the specification and original claims.

No new matter has been added by the above amendment. With entry thereof, Claims 1-3, 5-8, 10-12, 14, and 18-26 will be pending in the application.

REMARKS

The present invention is drawn to a transparent glazing containing an antifrosting absorbent layer, preferably for use in relatively cold environments, such as refrigerated enclosures, in order to reduce frost deposits and maintain visibility of items in the enclosure.

As recited in now-amended Claim 1, the invention is a transparent glazing comprising at least one viewing area, wherein the viewing area is combined with a porous antifrosting adsorbent layer deposited on at least one surface of said area, wherein said layer comprises at least one hydrophilic polymer and a porous absorbent material, wherein the at least one hydrophilic polymer and the porous absorbent material are different from each other, and wherein the pores in the layer in the wet state have a mean diameter between 1 and 15 microns.

The rejection of Claims 1 and 21 [sic, 20] under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,767,671 (Parker et al), is respectfully traversed.

Parker et al discloses an anti-mist coating for glass or plastic substrates comprising a hydrophilic polymer comprising a hydrophilic polyurethane, which is hydratable with water. However, Parker et al neither discloses nor suggests the combination of (1) a hydrophilic polymer and (2) a porous absorbent material, wherein (1) and (2) are different from each other. Nor does Parker et al disclose or suggest anything with regard to an average pore diameter of their anti-mist coating. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-2, 6-10, 16-17, 19, and 20-22 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,753,373 (Scholz et al), is respectfully traversed. Scholz et al disclose coating compositions and methods for producing optically clear articles having anti-reflective and anti-fogging properties comprising a porous inorganic metal oxide network, a surfactant, and optionally a coupling agent and/or a polymeric binder. There is no requirement in Scholz et al that their coating be porous, since the term "porous" therein only refers to the presence of voids between the inorganic metal oxide particles created when the particles pack together (column 4, lines 22-24). At any rate, there is no disclosure therein of pore size. In addition, Scholz et al discloses that the average thickness of their coating is between 500 and 2500 Å (column 21, lines 9-10), or between 0.05 to 0.25 μm. It is not seen how a coating this thin could possibly have an average pore diameter of between 1 and 15 μm, as required by the present claims.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claim 5 under 35 U.S.C. § 103(a) as unpatentable over Scholz et al in view of U.S. Patent No. 5,262,475 (Creasy), is respectfully traversed. The disclosures and

deficiencies of Scholz et al have been discussed above. Creasy does not remedy these deficiencies.

Creasy discloses hydrophilic compositions which are fog-resistant, which may include a crosslinked hydrophilic resin of a water-soluble polyvinyl alcohol (PVA) and a water-soluble polyvinyl pyrrolidone (PVP), deposited on, for example, a glass substrate such as a window.

The Examiner finds that it would have been obvious to crosslink the hydrophilic polymer of Scholz et al in view of Creasy's disclosure. Applicants respectfully disagree for the following reasons. Creasy requires the presence of both the PVA and PVP to work. Indeed, Creasy discloses that while most other anti-fogging compositions rely on hydrophobic materials to provide water insolubility, his invention utilizes all hydrophilic materials, and that the crosslinking of one water-soluble polymer as a means of insolubilizing another water-soluble polymer is considered highly unique; the hydrophilic character of such compositions is therefore not comprised or restrained (column 4, lines 3-10). One skilled in the art would thus be very wary of crosslinking the polymeric binder of Scholz et al. Moreover, even if one skilled in the art did crosslink Scholz et al's polymeric binders, the result would still not be the presently-claimed invention, since, among other reasons, Scholz et al do not require that their coating be porous. Indeed, when the polymeric binder of Scholz et al, which as indicated above is optional, is included, it would appear that the voids between the inorganic metal oxide particles are filled with the binder.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1, 11-12, 14 and 18 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,052,965 (Florentin et al) in view of Scholz et al, is respectfully traversed.

Florentin et al is discussed in the specification herein beginning at page 2, line 8. The disclosures and deficiencies of Scholz et al have been discussed above. Scholz et al does not supply the requisite teachings missing from Florentin et al. In addition, Scholz et al appears to be concerned primarily with conditions of high humidity and high temperature (column 1, lines 59-61), and discloses nothing with regard to the relatively-cold temperatures of a refrigerated environment. Moreover, even if Scholz et al were combined with Florentin et al, the result would still not be the presently-claimed invention. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1 and 3 under 35 U.S.C. § 103(a) as unpatentable over JP 10-167764 (Matsumoto)¹ in view of Scholz et al, is respectfully traversed.

Matsumoto discloses applying a synthetic resin film to impart anti-icing properties to a substrate, such as the window glass of an automobile, but does not disclose or suggest the inclusion in his synthetic resin film of a porous absorbent material, or that his synthetic resin film is porous *per se*. The disclosures and deficiencies of Scholz et al have been discussed above. It is not clear why one skilled in the art would combine these references but even if combined, the result would still not be the presently-claimed invention. Note also that the invention of Claim 3 requires three layers, wherein a plastic film is interposed between the glazing and the layer. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-3, 5-12, 14 and 16-23 under 35 U.S.C. § 112, first paragraph, is respectfully traversed. The Examiner finds that the term "to water" in the term "an absorbent material porous to water," is new matter. In reply, given the disclosure as a

¹The Examiner's reference to JP 08335502 refers to the application, not the publication, number of Matsumoto.

whole, it is not clear what else Applicants could have intended when originally describing the absorbent material as being porous, and it is respectfully submitted that one skilled in the art would interpret the disclosure as such. Nevertheless, the rejection is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that it be withdrawn.

The rejection of Claims 1-23 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. The Examiner asserts that it is unclear how an "adsorbent" composition can be made utilizing "absorbent" filler. In reply, the anti-frosting **layer** is recited as "adsorbent" because that is its function, i.e., this layer has a capacity to adsorb to the surface of the viewing area, as recited in Claim 1. At the same time, the adsorbent layer contains material that is absorbent. Applicants intend exactly what is being claimed. Accordingly, it is respectfully requested that this rejection be withdrawn.


In the Advisory Action, one reason given for refusal to enter the amendment filed November 29, 2002 was that the mean diameter of the pores in the layer was not recited in Claim 1 to be in the wet state. That reason is now moot.

All of the presently-pending claims in this application are now believed to be in

immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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Marked-Up Copy
Serial No: 09/926,609
Amendment Filed on: herewith

IN THE CLAIMS

--1. (Thrice amended) A transparent glazing comprising at least one viewing area, wherein the viewing area is combined with [an] a porous antifrosting adsorbent layer deposited on at least one surface of said area, wherein said layer comprises at least one hydrophilic polymer and [an] a porous absorbent material [porous to water], wherein the at least one hydrophilic polymer and the porous absorbent material are different from each other, and wherein the pores in the layer in the wet state have a mean diameter between 1 and 15 microns.

5. (Thrice amended) [The glazing according to Claim 1,] A transparent glazing comprising at least one viewing area, wherein the viewing area is combined with a porous antifrosting adsorbent layer deposited on at least one surface of said area, wherein said layer comprises at least one hydrophilic polymer and a porous absorbent material, wherein the at least one hydrophilic polymer and the porous absorbent material are different from each other, and wherein the hydrophilic polymer is crosslinked.--

Claims 9, 16 and 17 (Canceled)